Developmental Dynamics 2017 vol.246 N4, pages 285-290

MicroRNA-142 is a multifaceted regulator in organogenesis, homeostasis, and disease

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Abstract

© 2016 Wiley Periodicals, Inc. Over the past decade, microRNA-142 (miR-142) is emerging as a major regulator of cell fate decision in the hematopoietic system. However, miR-142 is expressed in many other tissues, and recent evidence suggests that it may play a more pleiotropic role during embryonic development. In addition, miR-142 has been shown to play important functions in disease. miR-142 displays a functional role in cancer, virus infection, inflammation, and immune tolerance. Both a guide strand (miR-142-3p) and passenger strand (miR-142-5p) are generated from the miR-142 hairpin. miR-142-3p and -5p display overlapping but also independent target genes. Loss of function mouse models (genetrap, global knock out [KO], and conditional KO) have been reported and support the important role of miR-142 in different biological processes. This review will summarize the abundant literature already available for miR-142 and will lay the foundation for future works on this important microRNA. Developmental Dynamics 246:285–290, 2017. © 2016 Wiley Periodicals, Inc.

http://dx.doi.org/10.1002/dvdy.24477

Keywords

development, disease, ERK, miR-142, stem cells, WNT signaling

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